

Proposed Template Changes

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California Air Resources Board
January 17, 2019

Affected Appendices

- Appendix 4, Distribution Mains and Services Pipelines
- Appendix 6, Meter Set Assembly Systems
- Appendix 7, Storage Facilities
- Appendix 8, Template Summary

Proposed Change to Appendix 4

Highlight Appendix 4 emissions totals on DM&S pipeline template tabs that transfer to Appendix 8.

	Count of Leaks Carried over from Prior Year	Count of Leaks Discovered in the Year of Interest	Count of Leaks Repaired in the Year of Interest	Average Days to Repair Leaks	Count of Estimated Unsurveyed Leaks in the Year of Interest	Count of Remaining Known Leaks at final day of the Year of Interest (12/31/17)	Emissions from Leaks Carried over from Prior Year.	Emissions from Leaks Discovered in the Year of Interest.	Emissions from Estimated Unsurveyed Leaks in the Year of Interest	Total Emissions in the Year of Interest [Mscf of Natural Gas]
Grade 1	0	2,904	2,904	1	N/A*	0	0	45,260	N/A	N/A
Grade 2	484	1,396	1,039	166	N/A*	841	6,640	47,868	N/A	N/A
Grade 3	9,039	4,609	4,663	728	N/A*	8,985	328,422	183,376	N/A	N/A
Graded Leak Total	9,523	8,909	8,606	N/A**	N/A*	9,826	335,061	276,504	N/A*	N/A
Above Ground Hazardous	0	0	0		N/A*	0	0	0	N/A*	N/A
Above Ground Non-Hazardous	0	8	3	99	N/A*	5	0	281	N/A*	N/A
Above Ground Non-Hazardous Minor	1	0	0		N/A*	1	57	0.0	N/A*	N/A
AG Total	1	8	3	N/A**	N/A*	6	57	281	N/A*	N/A
Total of All Leaks	9,524	8,917	8,609	N/A**	N/A*	9,832	335,118	276,785	N/A*	N/A
Main/Plastic	293	1,051	916	148	1,233	428	12,816	81,183	153,638	247,637
Main/Unprotected Steel	5,610	2,927	2,262	674	1,462	6,275	275,371	142,390	85,811	503,572
Main/Protected Steel	547	329	811	711	258	65	5,645	4,593	7,582	17,820
Main/Unknown	25	57	43	723	0	39	1,066	5,450	0	6,516
Service/Plastic	461	1,703	1,430	145	1,766	734	612	3,908	5,982	10,502
Service/Unprotected Steel	2,130	2,219	2,201	330	1,562	2,148	36,711	34,158	37,558	108,427
Service/Protected Steel	347	514	794	342	529	67	1,640	2,881	5,784	10,305
Service/Copper	0	0	0	0	0	0	0	0	0	0
Service/Unknown	111	117	152	637	0	76	1,257	2,222	0	3,479
Unknown/Unknown	0	0	0	0	0	0	0	0	0	0
Total	9,524	8,917	8,609	N/A**	6,810	9,832	335,118	276,785	296,355	908,257

Proposed Change to Appendix 6

Replace “Number of Days Leaking” with “Number of Days to Repair.”

Prior:

If not repaired by 12/31/xx List the Scheduled Date of Repair (DD/MM/YY)	Reason for Not Scheduling a Repair	Number of Days Leaking	Number of Days Leaking	Comments or Additional Information
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Proposed:

If not repaired by 12/31/xx List the Scheduled Date of Repair (DD/MM/YY)	Reason for Not Scheduling a Repair	Number of Days Leaking	Number of Days to Repair	Comments or Additional Information
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Proposed Changes to Appendix 7

- Modify the EF for Compressor and Component Leaks

Prior:

Leaker EFs--Storage Station, Gas Service
(Survey was conducted, and only recorded leaking components use following EFs)

Valve = 129.998 Mscf/yr/dev
 Connector = 49.573 Mscf/yr/dev
 Open-Ended Line = 151.285 Mscf/yr/dev
 Pressure Relief Valve = 347.422 Mscf/yr/dev
 Meter = 169.331 Mscf/yr/dev

Population EFs--Storage Wellheads, Gas Service
(Survey was not conducted, all components use following EFs)

Connector = 0.0876 Mscf/yr/dev
 Valve = 0.876 Mscf/yr/dev
 Pressure relief Valve = 1.489 Mscf/yr/dev
 Open Ended Line = 0.2628 Mscf/yr/dev

Proposed:

Leaker EFs--Storage Station, Gas Service
(Survey was conducted, and only recorded leaking components use following EFs)

Valve = 0.35615 Mscf/day/dev
 Connector = 0.13581 Mscf/day/dev
 Open-Ended Line = 0.41447 Mscf/day/dev
 Pressure Relief Valve = 0.95184 Mscf/day/dev
 Meter = 0.46392 Mscf/day/dev

Population EFs--Storage Wellheads, Gas Service
(Survey was not conducted, all components use following EFs)

Connector = 0.00024 Mscf/day/dev
 Valve = 0.0024 Mscf/day/dev
 Pressure relief Valve = 0.00408 Mscf/day/dev
 Open Ended Line = 0.00072 Mscf/day/dev

Device Type	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Prior Survey Date (MM/DD/YY)	Number of Days Leaking	Emission Factor or Engineering Estimate (Mscf/day)	Annual Emissions (Mscf)
V	08/21/17	11/19/17	10/06/16	207	0.3562	7,446

Proposed Changes to Appendix 7

- Replace “AND” with “or” in the “Vapor Recovery Unit AND thermal oxidizer” column

Prior:

Type of Dehydrator (Glycol or Desiccant)	Vapor Recovery Unit AND Thermal Oxidizer (Y/N)	Annual Volume of Gas Withdrawn (Mscf)
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Proposed:

Type of Dehydrator (Glycol or Desiccant)	Vapor Recovery Unit or Thermal Oxidizer (Y/N)	Annual Volume of Gas Withdrawn (Mscf)
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Proposed Changes to Appendix 8 Summary Emissions Inventory

- Southern California Gas proposed changing the system-wide leak formula to use “withdrawals from storage” instead of “injections into storage”
- Appears to be no difference in system-wide leak rate of 0.32% in 2017. (Shown in following slide)
- CPUC and CARB propose to keep “injections into storage.”

Proposed Changes to Appendix 8 Summary Emissions Inventory

Table 5: System Wide Emissions – Throughput Categories, 2015-2017

Throughput Category	Natural Gas Volume (MMscf)		
	2015	2016	2017
Total Storage Annual Volume of Injections to Storage	199,522	116,579	155,272
Total Storage Annual Volume of Gas Used by the Gas Department	NA	NA	1,933
Total Transmission Annual Volume of Gas Used by the Gas Department	7,717	6,107	5,875
Total Transmission Volume of Annual Gas transported to or for Customers in state	1,832,676	1,736,336	1,842,669
Total Transmission Volume of Annual Gas transported to or for Customers out of state	16,775	18,002	11,241
Total Distribution Annual Volume of Gas Used by the Gas Department	261	156	315
Total Throughput	2,056,950	1,877,179	2,017,306
Total Emissions	6,601	6,267	6,399
System-wide Leak Rate (Emissions/Throughput)	0.32%	0.33%	0.32%

	Gas Storage Facilities: Total Annual Volume of Injections into Storage (MMscf)	Gas Storage Facilities: Total Annual Volume of Withdrawals from Storage (MMscf)
Alpine	-	-
CVGS	9,440	10,492
Gill Ranch	10,792	10,499
Lodi GS	18,806	23,082
PG&E	36,770	40,987
SCG	48,021	40,008
SDG&E	-	-
SWG	-	-
West Coast Gas	-	-
Wild Goose Storage	31,443	35,295
TOTAL	155,272	160,362

System-wide Leak Rate using Injection:

$$\frac{6,399}{155,272 + 1,862,034} = 0.32\%$$

System-wide Leak Rate using Withdrawal:

$$\frac{6,399}{160,362 + 1,862,034} = 0.32\%$$

Proposed Changes to Appendix 8 Summary Emissions Inventory

- Modified to include the 2015 baseline emissions as a perennial reference (green shaded), the prior year (2017) and the current year (2018).
- Added two columns (green shaded) to show emission change and percent change from 2015 baseline to current year.

Emission Source Categories		Fugitive or Vented	For Reference Only: 2015 Baseline Emissions (Mscf)	2017 Total Annual Volume of Leaks & Emissions (Mscf)	2017 Total Annual Count of Leak & Emission Items	2018 Total Annual Volume of Leaks & Emissions (Mscf)	2018 Total Annual Count of Leak & Emission Items
Emission Change for Year Over Year Comparison from 2017 to 2018	Percentage Change for Year Over Year Comparison from 2017 to 2018	Count Change for Year Over Year Comparison from 2017 to 2018	Percentage Change for Year Over Year Comparison from 2017 to 2018	Emission Change for Year Over Year Comparison from 2015 to 2018	Percentage Change for Year Over Year Comparison from 2015 to 2018	Explanation for Significant Percentage Change for Year Over Year Comparison from 2017 to 2018	

Conclusion

Any questions or comments?

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